Summary of CANDE Commands

(APPEND / ADD) [file-name[/user-code]][sequence-list]

Appends records from the specified file to the end of the work file. If a sequence-list *is given, only those lines indicated will be appended. Each appended line is given a sequence number equal to the sum of that line's original sequence number and the highest sequence number in the work file before the command was given. If no* file-name *is given, the work file is appended to itself.*

BYE

Terminates the current user's session. Prints a summary of the amount of connect time, CANDE time, CPU time, and I/O time used during this session and then disconnects the terminal.

CHANGE file-name (TO file-name / TYPE TO file-type)

Changes the name or type of an existing disk file to the name or type given.

CHANGE (USER / PROJECT)

Places the user in the specified mode. See Note 11 for details.

C[OMPILE][file-name][compiler]

Compiles a source file and produces an object file. If no file-name *is given, the work file is used. If no* compiler *is specified, then the* file-type *is used to determine the proper compiler.*

COPY [file-name[/user-code]][sequence-list][RESEQ[[(range / base)]][+ increment]]

Copies the specified file into the work file. The previous contents of the work file are lost. If no file-name *is given, the work file is used. If a* sequence-list *is given, only the specified lines will be copied. If* RESEQ *is given, then the lines copied will be resequenced as specified.*

DELETE ([ALL] / sequence-list)

Deletes all or part of the work file. If a sequence-list *is given, only the specified lines are deleted, otherwise the entire file is deleted. Even if all records are deleted, the file will still exist although it will be empty.*

(E[XECUTE] / DO) [file-name[/user-code]]

Begins execution of the object version of the specified file. If no file-name *is given, the work file is used. If no object version of the file exists, the command cannot be executed.*

FILE[S]

Lists the names of all files in the users' library. Object file names are preceded by an asterisk.

FIND [LIT[ERAL]]delimiter string delimiter [sequence-list][PRI[NT](TEX[T] / SEQ[UENCE])]

Locates all occurrences of the given string in the work file. If a sequence-list *is given, only the specified lines will be searched. If* PRINT TEXT *is given, each line containing the string will be printed, otherwise only the sequence number of the line will be printed. The* delimiter *may be any printing character which does not appear in the* string. *See note 13 for an explanation of the effect of* LITERAL.

(FIX / *) sequence-number delimiter old-string delimiter [new-string]

Replaces the first occurrence of the old-string *on the specified line by the optional* new-string. *If the* old-string *is not present on the specified line, an error will occur but not until the work file is updated.*

GUARD

Creates or updates a guard-file. *A* guard-file *is used to allow selective access to a users' files. The* guard-file *contains the project or user numbers of those projects or users who are to be allowed access to a file. The file is "guarded" by performing a* LOCK file-name WITH guard-file-name *command. To create a guard-file type the verb* "GUARD." *The user will be asked:*

NEW OR OLD LOCK FILE?

to which he replies "NEW" or "OLD." The user will then be asked:

LOCK FILE NAME?

to which he replies with the name of the guard-file. If this is a new guard-file, the user is immediately placed in the "ADD" *option as described below. Otherwise the computer types*

ADD, DELETE, LIST, SAVE, OR QUIT?

to which the user must reply with one of the option words. The options are as follows:

ADD *Adds project or user numbers to the guard-file. The user is asked*

READ ONLY NAMES?

to which he replies with a list of those users and projects which are to be granted read-only access. Users and projects are separated by commas. He is then asked

READ/WRITE NAMES?

to which he replies with a list of those users and projects which are to have read and write access.

DELETE *Deletes names from the* guard-file. *The user is asked:*

NAMES TO BE DELETED?

to which the user replies with a list of users and projects.

LIST *List all names in the file and their read/write or read/only status.*

SAVE *Makes a permanent copy of the* guard-file *in the users' library. Any changes made have no effect unless the file is saved.*

QUIT *Ends the program.*

HELLO

Terminates the users' session but does not disconnect the terminal. Instead a new log-on procedure is initiated. This allows a second user to sign-on without re-dialing.

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(L[IST]  ) ([CHANGES]                          )[SQUASHED][sequence-list]
(P[RINT] ) ([file-name[/user-code]]            )
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Lists all or part of the specified file. The LIST *command in addition precedes the listing with a heading giving the file name and type and the date and time, while* PRINT *gives only the listing. If no* file-name *is given, the work file is used. If* CHANGES *is given, only those lines which have been changed since the last time the file was updated are printed. If* SQUASHED *is given, any groups of two or more spaces are compressed to one space. If a* sequence-list *is given, only those lines specified will be printed.*

(L[IST] / P[RINT]) FILES [(file-name / file-type) [, (file-name / file-type)] ...]

Lists the name, type, size, creation and access dates, blocking, save factor, and protection for the specified files. If no file-names *or* file-types *are given, information about all files is listed. If* file-types *are given, information about all files of that type is listed. If* file-names *are given, only information about those files will be listed. An asterisk between the creation and access dates indicates that the file has been accessed today.*

LOAD file-name

Loads a saved disk file into the work file.

LOCK [(SOURCE / OBJECT)] file-name [WITH guard-file-name]

Sets the indicated file to single users status or attaches a guard file to it. If SOURCE *or* OBJECT *is given, only that version of the file is locked. If a* guard-file-name *is given, the file is protected according to the contents of the guard file.*

(MAKE / CREATE) file-name [type]

Creates a new work file and gives it the name and type specified. If type is omitted, the file is of type SEQ.

MERGE [file-name[/user-code]][sequence-list] [RESEQ [(range / base)] [+ increment]]

Merges the specified file into the work file. A line in the work file is not changed if it has the same number as a line to be merged. If no file-name *is given, the work file is the source of the merge. If a* sequence-list *is given, only the specified lines are merged. If* RESEQ *is given, the specified lines are resequenced before they are merged.*

PUNCH [file-name]

Punches a file in a format that can be read by the TAPE *command. If no* file-name *is given, the work file is punched. The computer punches 10 rubouts, the name of the file, 40 rubouts, the contents of the file and 40 more rubouts. To reenter the tape begin reading in the first set of 40 rubouts and give a TAPE command.*

REMOVE [[(SOURCE / OBJECT)] file-name[,file-name]...]
[,[(SOURCE / OBJECT)] file-name[,file-name]...]...

Removes the specified file from the users' library. If a type is given, only that version of the file is removed. If no file-name *is given, the work file is removed.*

RENAME file-name

Changes the name of the work file.

REP[LACE][FIR[ST]][LIT[ERAL]] delimiter old-string delimiter WIT[H]
delimiter new-string delimiter [sequence-list][PRI[NT][(TEX[T] / SEQ[UENCE])]]

Replaces all occurrences of the old-string *with the* new-string. *If* PRINT *is absent, only the number of strings replaced is given. If* PRINT SEQUENCE *is given, the sequence numbers of those lines altered are also printed. If* PRINT TEXT *is used, the edited version of each altered line is printed. The effect of* LITERAL *is explained in note 13. If* FIRST *is given, only the first occurrence of the* old-string *on any given line is changed.*

RESEQ [file-name][[(range / base)]][+ increment]

Resequences the given file as specified. If no file-name *is given, the work file is resequenced. If a range is given, only those lines in that range are resequenced. If base is given, the entire file is resequenced. Lines are renumbered successively beginning with the base or lower limit of the range and adding the increment to it for each additional line. The default values for* base *and* increment *if they are not given is 100 + 100.*

R[UN][file-name][([compiler] / [/user-code])]

Causes CANDE to execute the specified file. If necessary, the file will be compiled first. If file-name/user code *is given, an object version of the file must exist and* RUN *is equivalent to* EXECUTE. *The* compiler *specification has the same effect as in the* COMPILE *command.*

SAVE [n]

Places the current work file in the users' permanent library. The save-factor n *may be specified as any integer in the range 0-999. If* n *is less than 7 or absent, it will be given the value 7. See Note 12.*

SCH[EDULE] file-name-1 TO file-name-2

Causes file-1 to be scheduled to be run in background mode. Any CANDE commands can be placed in file-1. To run a program in background mode, the file should contain RUN file-name. *Any input data to the scheduled program which would normally come from the teletype comes from file-1. All output which would normally be printed on the teletype will be placed in file-2. Thus by listing file-2, the results of the scheduled job may be retrieved. See also* STATUS *and* STOP.

S[EQ][base][+ increment]

Cause CANDE to automatically provide sequence numbers for the work file thus saving the user from having to type them. The base *specifies the number to be placed on the first line and the* increment *is the amount added to the base for successive lines. The default values for* base *and* increment *are 100 + 100. CANDE stops providing sequence numbers when a carriage return is typed immediately following the sequence number.*

STATUS file-name

Gives the status of a scheduled job. The three possible responses are SCHEDULED, RUNNING(n), and DONE. SCHEDULED specifies that the program has not been run yet. n in RUNNING specifies which record in the scheduled input file is currently being accessed by CANDE. File-name *must be the scheduled* <u>output</u> *file.*

STOP file-name

Causes the specified scheduled job to be terminated. The status of the job before it was terminated is printed. File-name *is the scheduled* <u>output</u> *file.*

TAPE [SEQ [base][+ increment]]

Allows a paper tape to be read into the work file. If the tape contains sequence numbers, then just TAPE *should be used. If no sequence numbers are on the tape, the* SEQ *option will place sequence numbers in the work file along with the information on the tape.*

(TO | SS) (SPO | user-number | project-number) message

CANDE transmits the message to the specified destination. SPO is the supervisory printer on the B5500. If the specified user or project is not logged in, then the message "NOT ON" is printed. If the specified user or project is executing a program, then the message (user-number | project-number) *(line-number) BUSY will be printed. A pound sign (#) indicates that the message has been transmitted.*

TYPE file-type

Changes the type of the work file to the given file-type.

UNLOCK [[SOURCE | OBJECT]] file-name

Sets the protection on the specified version of the given file to read-only status for all users. If SOURCE *or* OBJECT *is not given, both versions of the file are unlocked.*

U[PDATE]

Causes all changes to be incorporated into the work file.

WHATS [file-name]

Causes CANDE to print the name and type of the work file if no file-name *is given. If* file-name *is given, then the length of file is also printed.*

NOTES:

1. *Square Brackets indicate an optional construct. Parentheses indicate a choice of two or more constructs.*

2. *A* file-name *may consist of up to 6 alphanumeric characters, the first of which must be alphabetic.*

3. *A* user-code *can be either a five-digit user number or a four-digit project number.*

4. *A* sequence-list *consists of elements of the form*

   a. S_1
   b. S_1-S_2
   c. S_1-*END*
   d. *END*

Each entry must be separated by commas. A maximum of nine sequence numbers may be in the list. S_1 *indicates a single line number.*
S_1*-*S_2 *indicates all lines between line* S_1 *and line* S_2 *inclusive.*
S_1*-END indicates all lines from line* S_1 *to the end of the file. END specifies the last line in the file. The sequence list must be in ascending numerical order.*

5. *A* file-type *is any of the following:*

ALGOL BASIC COBOL DATA FORTRAN INFO

LOCK SEQ UNKNOWN.

A file-type *may be abbreviated as a colon followed by the first letter of the* file-type.

6. *A* compiler *is one of the following:*

ALGOL BASIC COBOL FORTRAN

7. *A file will be updated by all of the following commands:* ADD, APPEND, COMPILE, DELETE, DO, EXECUTE, FIND, LIST, MERGE, PRINT, PUNCH, RENAME, REPLACE, RESEQ, RUN, SAVE.

8. *The following are special characters and have the specified meaning.*

'	*Delete last character input*
!	*Delete entire current line*
;	*Separate CANDE commands on one line*
∅ or ,	*Separate parameters within a command*
#	*Indicates successful completion of a command*
?	*Requests additional information from CANDE*
"	*Specifies a comment*
+	*Specifies an increment for SEQ and RESEQ*
-	*Separates sequence numbers.*

9. *To interrupt the computer while it is typing, depress the break key quickly but firmly. To interrupt the computer when it is not typing type a WRU which is accomplished by depressing the control key and typing "E".*

10. *The following is a sample log-in procedure:*

```
UNIVERSITY OF DELAWARE TIME SHARING -01/04 LINE 04
ENTER PROJECTCODE/USERCODE PLEASE-0532/01776
AND YOUR PASSWORD
********
ENTER TERMINAL NUMBER-114
PROJECT OR USER-USER
```

10/25/71 9:47 PM
GOOD EVENING, DOE YOU HAVE LINE 04

#

The underlined information is provided by the user.

11. *The separation of files into libraries necessitates the appending of a second name to each* file-name. *This allows many users to have a file with the same first name. The name which is used for the file suffix is determined by which mode the user is operating in. In user mode, the user number is appended to the* file-name. *In project mode the project number is appended. This means that the user has access to two libraries, his own and that associated with the project. Any user who is authorized to use a specific project can access files created in project mode. Files created in user mode are available only to the user who created them.*

12. *In the present state of the time sharing system, the save factor has almost no effect. Files are purged if they have not been accessed for seven days regardless of the size of the save factor. The one exception is a save-factor of zero which causes the file to be purged at the next library maintenance.*

13. *Normally when a* FIND *or* REPLACE *command is executed, the file being searched is broken up into 'tokens' and the tokens are then compared with the string. A token is:*

    a. *a string starting with an alphabetic character and composed entirely of alphanumeric characters.*

    b. *a string starting with a decimal digit and composed entirely of digits.*

    c. *Any non-alphanumeric character excluding blank.*

Therefore if the string being searched for were "ART" it would match "ßARTß" or "ßART:" but not "ßART1" or "HEART". In order to force the search string to match internal occurrences of the string the word LITERAL *is given with the command. This makes any match no matter where it occurs a valid one. This is also the only way to have a string containing only blanks match.*